



MC 1150E CRAWLER TRACTOR

LAST PHASE

SSGT BENZEL

SGT SUSKIN

MC1150E



TERMINAL LEARNING OBJECTIVE

Provided with a MC1150E and a training area; with the aid of notes and references; operate the MC1150E in support of Engineer operations in accordance with the

ENABLING LEARNING OBJECTIVES

- **Given descriptions of a MC1150E characteristics; without the aid of notes and references ; mark each correct description in accordance with the references. (1345.2. 4a)**

ENABLING LEARNING OBJECTIVES

- **Given a diagram of the instruments and controls of the MC1150E; without the aid of references; properly identify the selected instruments and controls in accordance with the references. (1345 .2.4b)**

ENABLING LEARNING OBJECTIVES

- **Provided with a MC1150E and necessary tools ; with the aid of references; perform before, during , and after operation checks in accordance with the references. (1345 .2.4c)**

ENABLING LEARNING OBJECTIVES

- **Provided with a MC1150E and a training area; with the aid of notes and references; construct a Flat Bottom Ditch in accordance with the references. (1345 .2.4d)**

EVALUATION

- **There will be a 25 question multiple choice written examination and a flat bottom ditch performance examination, during this block of instruction.**

MISSION

- The mission of the MC1150E is to support infantry, artillery, communication and engineer units in the forward edge of the battle area (FEBA).

FUNCTIONS

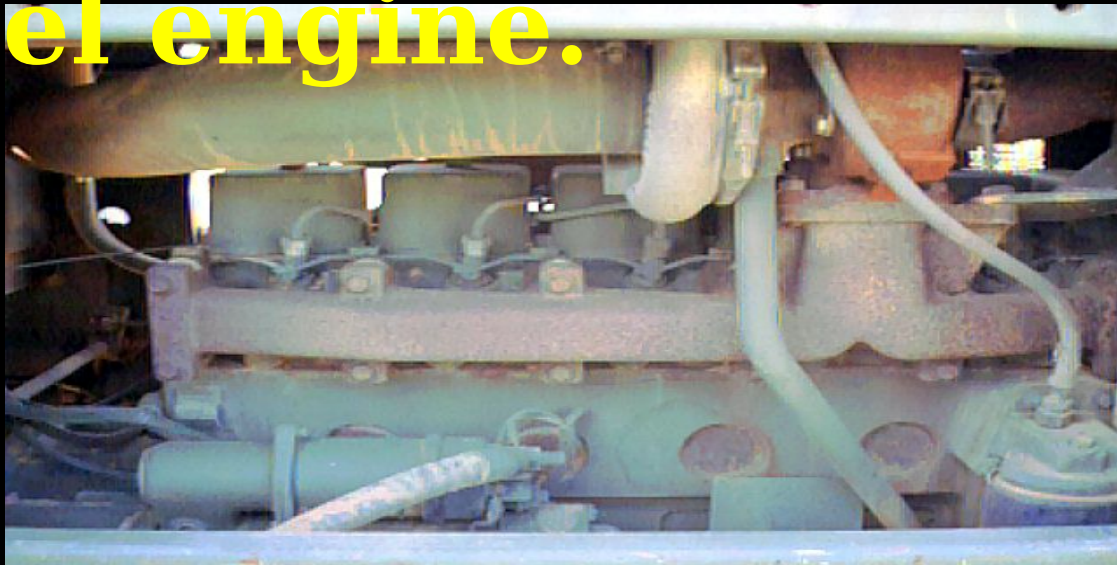
- Primary function is bulldozing and land clearing.
- Secondary functions include winching loads and vehicle recovery.

CHARACTERISTICS

- Diesel engine powered, full-tracked, light-weight dozer manufactured by J.I. Case.
- Able to perform fording operations.
- Capable of being transported both internally and externally by aircraft.

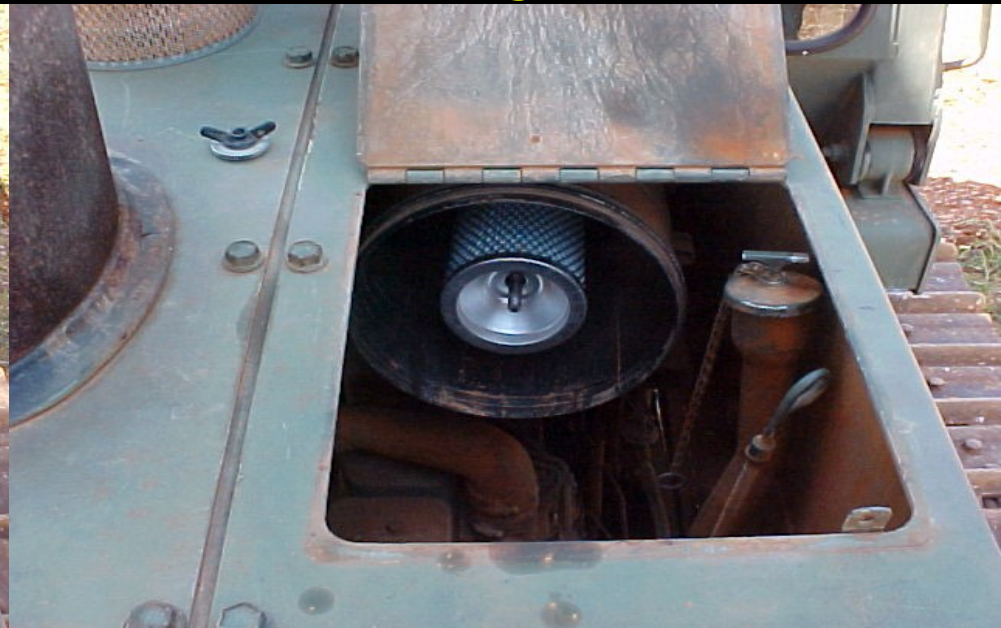
ENGINE

- **J.I. Case 6T-590, six cylinder , in-line, fuel injected, turbocharged, water cooled diesel engine.**



ENGINE cont.....

- The Engine air intake system consists of a primary and secondary



ENGINE cont.....

- It has a 24 volt, negative ground electrical system.



ENGINE cont.....

- **Maximum horsepower is 118 @ 2100 RPM's.**



TRANSMISSION

- **Each track is driven independently through a separate set of clutches and gears.**
- **The MC1150E is capable of four speeds forward and four speeds reverse.**

TRANSMISSION cont.....

- Maximum speed forward is 6.3 mph
- Maximum speed reverse is 7.6 mph

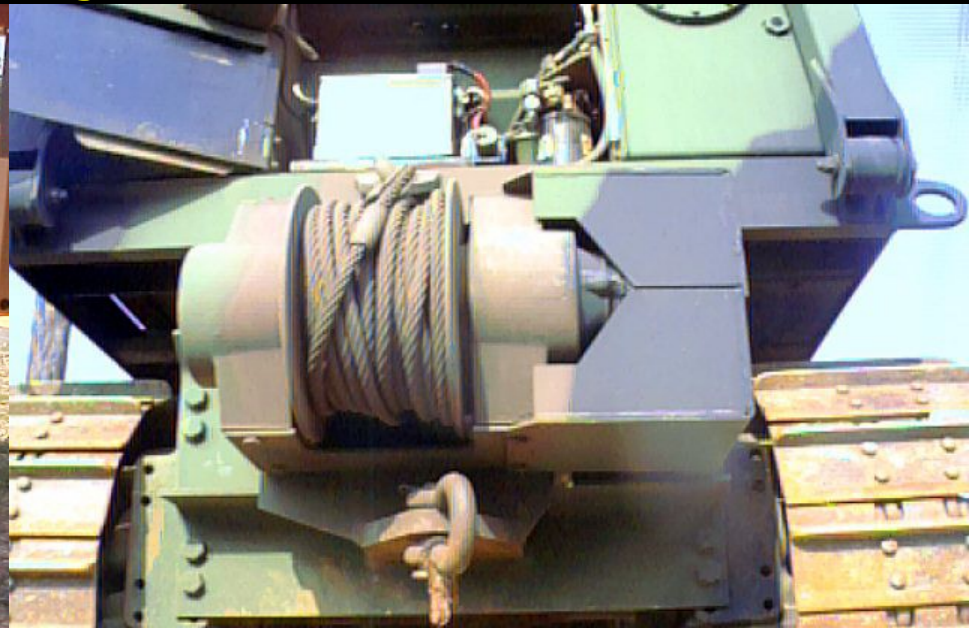
TRACK SYSTEM

- Consists of track frames that pivot independently on a shaft at the rear of the chassis, allowing the vehicle to follow the terrain.



COMPONENTS

- The MC1150E comes with a dozing blade and winch which are hydraulically operated.



COMPONENTS cont.....

- It also has a roll over protective structure. (ROPS)



COMPONENTS cont.....(blade)

- Length of the blade is 9 feet 2 inches wide.
- Consists of 2 cutting edges and 2 end bits, which are worn 3/4" from



COMPONENT cont....(blade)

Able to TILT 13.6 inches left
or right of center



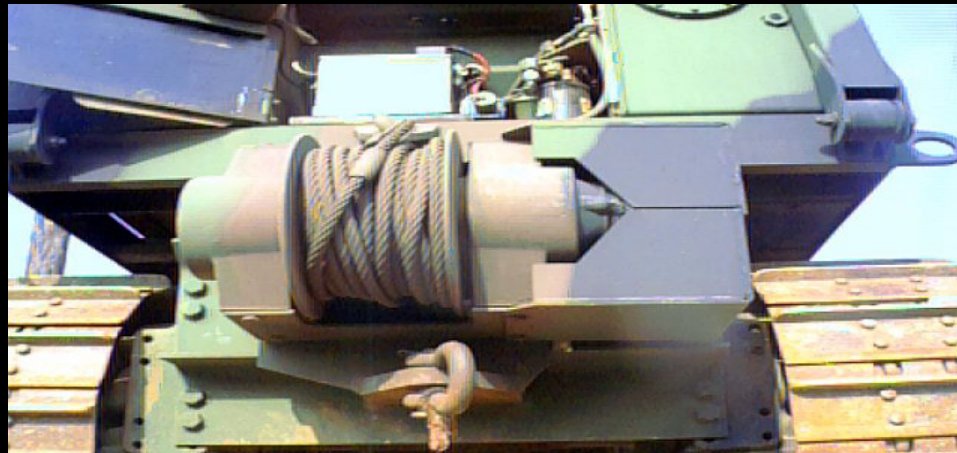
COMPONENT cont.....(blade)

Capable of producing
Angles from 0 to 25
degrees

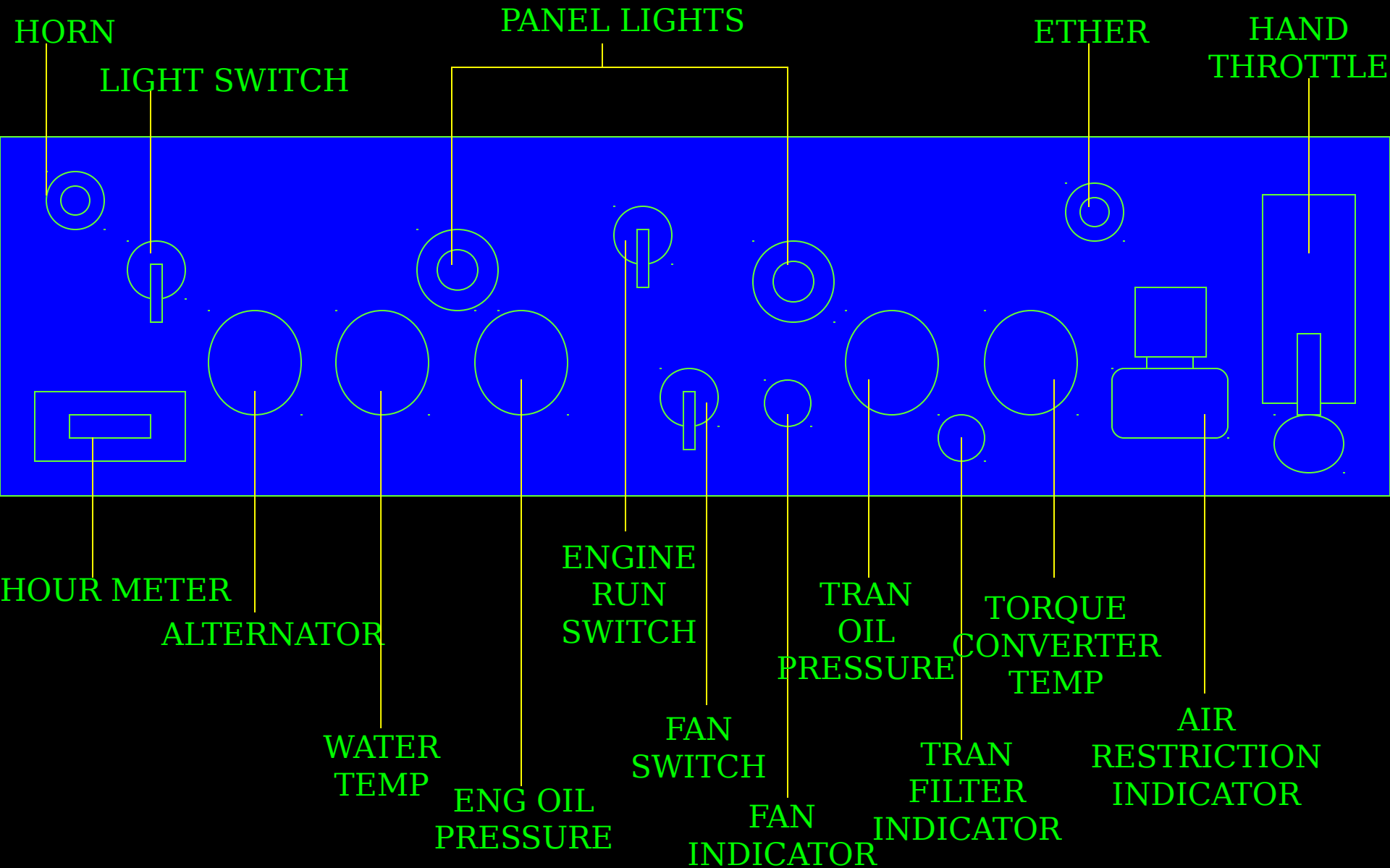


COMPONENT cont.....(winch)

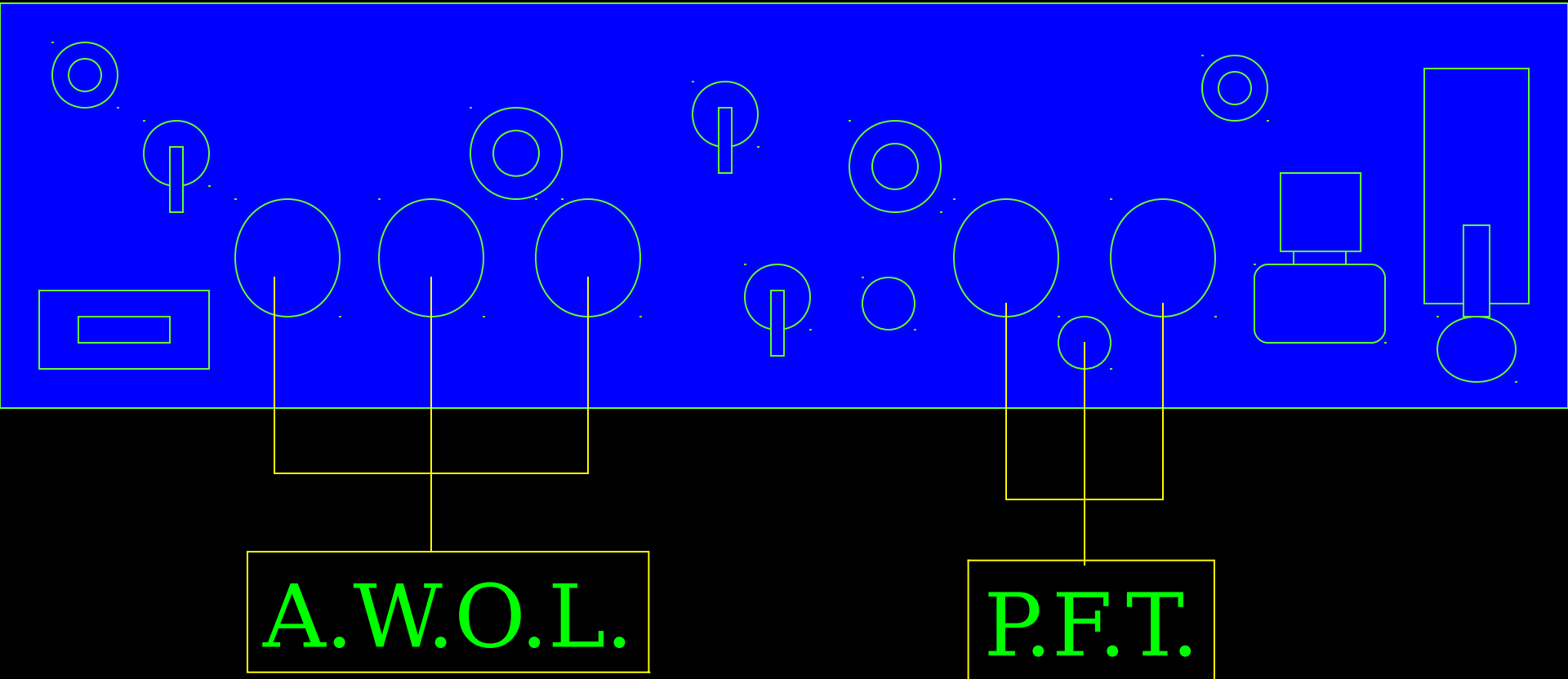
- (Model GH-15) is used for vehicle recovery operations.
- Single speed, hydraulically operated.
- Holds 164 ft. of 3/4" wire rope.
- Max pulling capacity is 30,000 lbs.

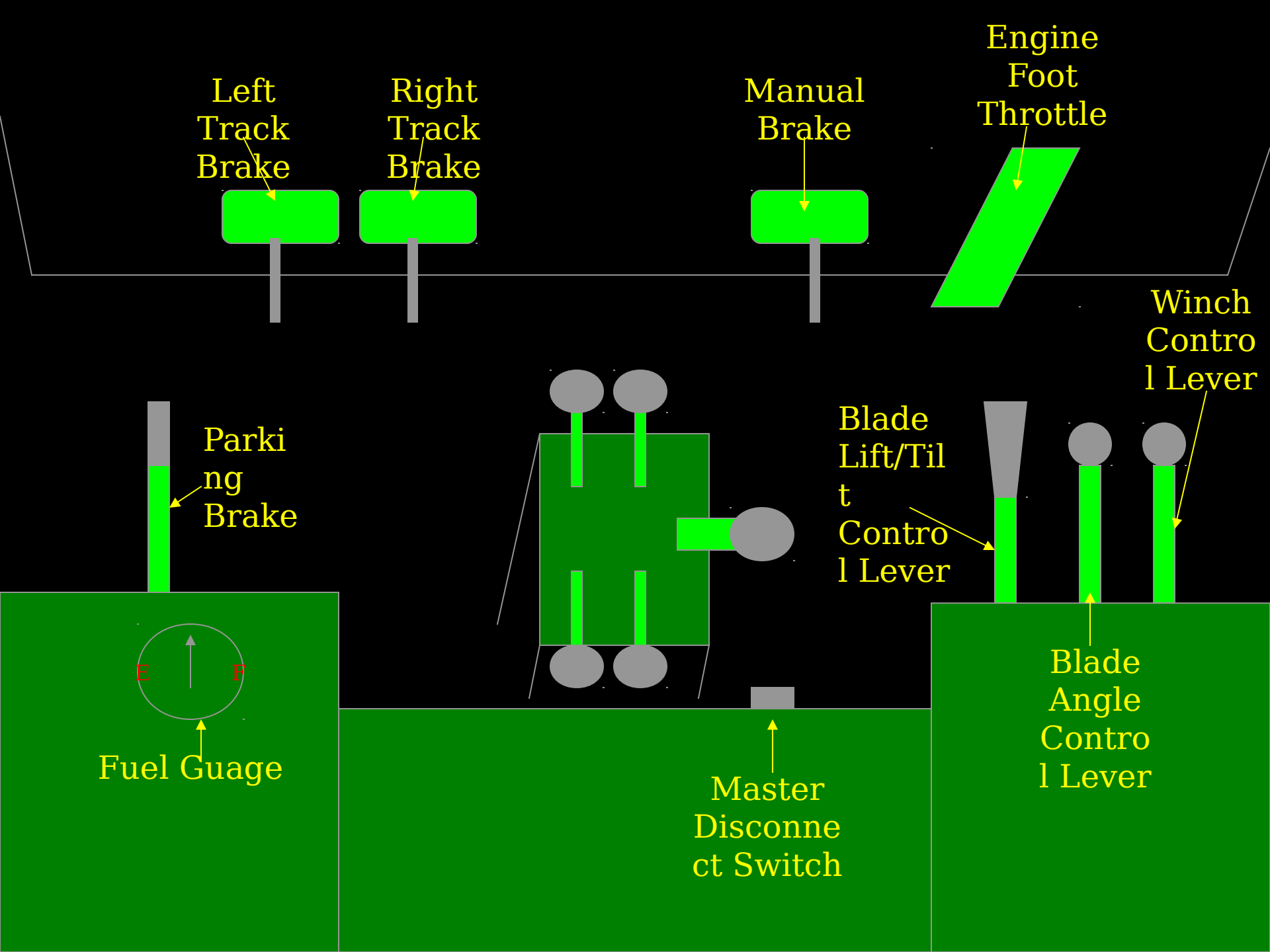


INSTRUMENTS AND CONTROLS



ACRONYMS





BASIC OPERATIONS

- STARTING/STOPPING Procedures.
- GEAR SELECTIONS.
- STEERING TECHNIQUES.
- DOZING TECHNIQUES.

STARTING PROCEDURES

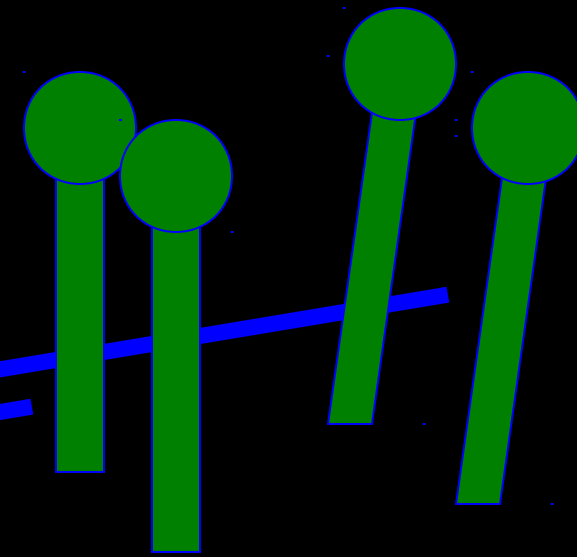
- Perform Before Operation Checks in accordance with NAVMC 10523.
- Mount the tractor from the Left Side of the vehicle, utilizing Hand rails and Foot peg.
- Ensure Parking Brake is engaged and ALL Control Levers are in Neutral.
- Turn the Engine Run Switch to the ON position.
- Turn the Master Disconnect Switch to the ON position.
- Push the Foot Throttle down 1/2 way, while pressing the Engine Start button to Engage the starter.
- Let the engine Warm-up 3-5 minutes BEFORE operating.



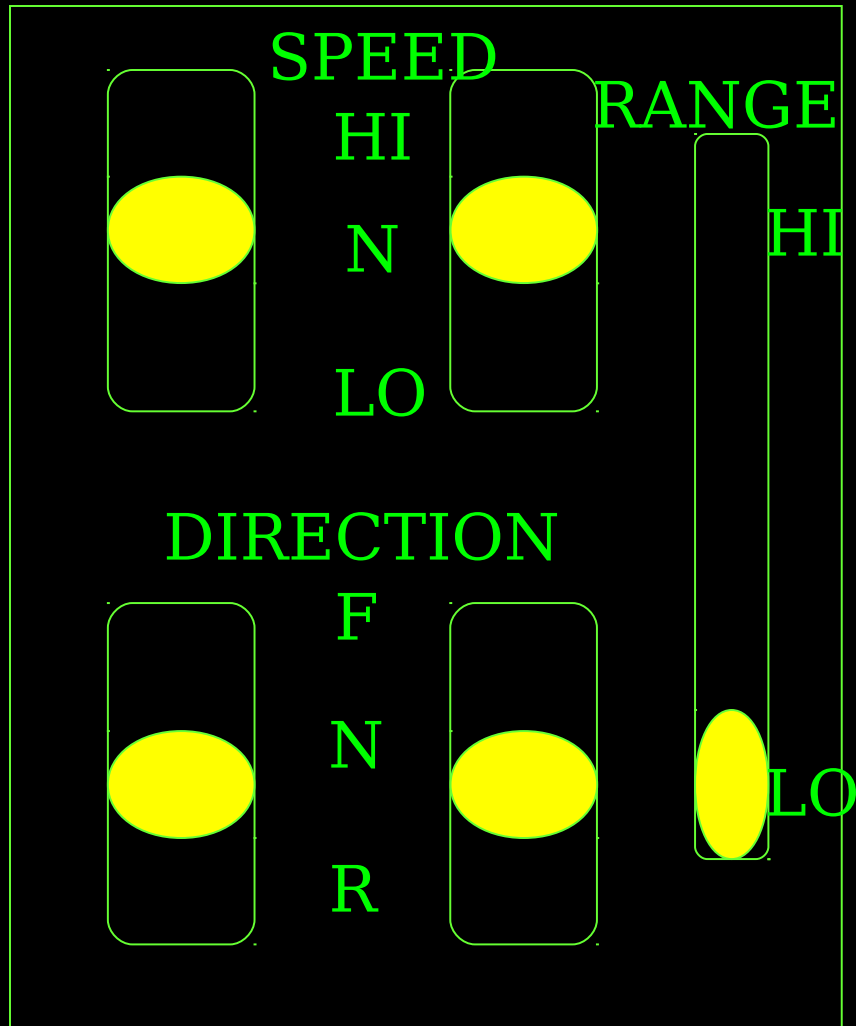
Transmission
Control Tower

Neutral Lock

Starter Button

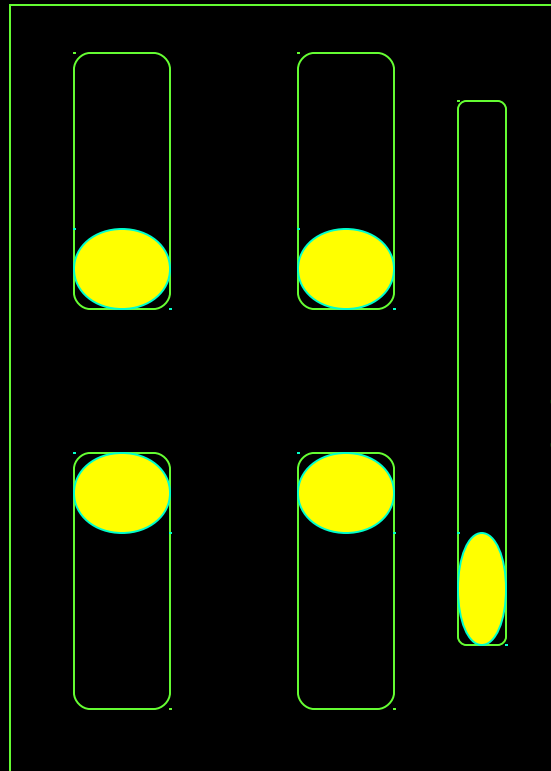


CONTROL SETTINGS



1ST

FORWARD



SPEED

HI

N

LO

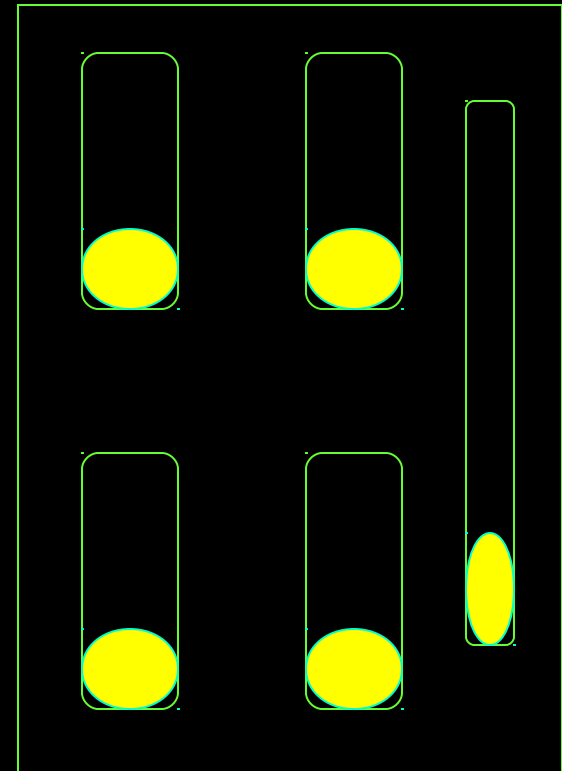
DIRECTION

F

N

R

REVERSE_{RANGE}



HI

LO

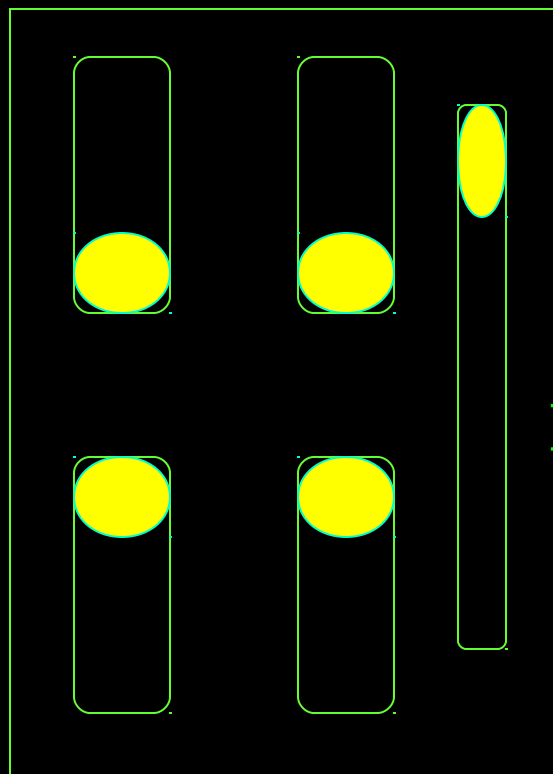
2ND

FORWARD

SPEED

REVERSE

RANGE



HI

N

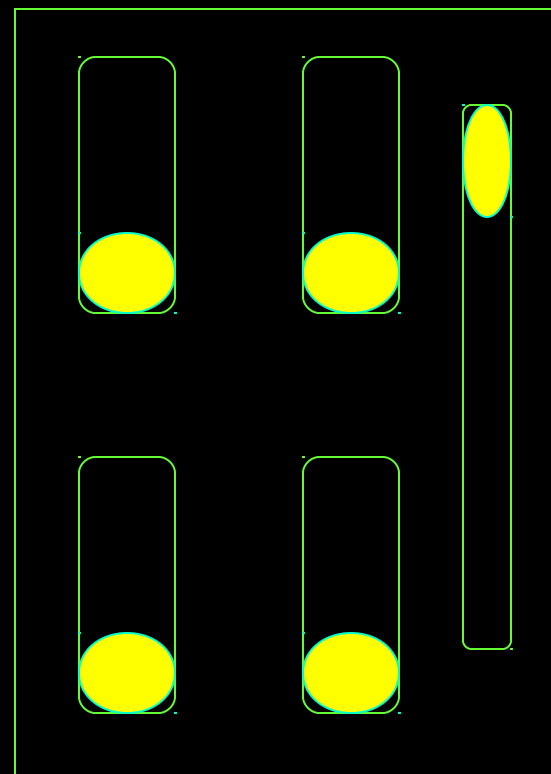
LO

DIRECTION

F

N

R



HI

LO

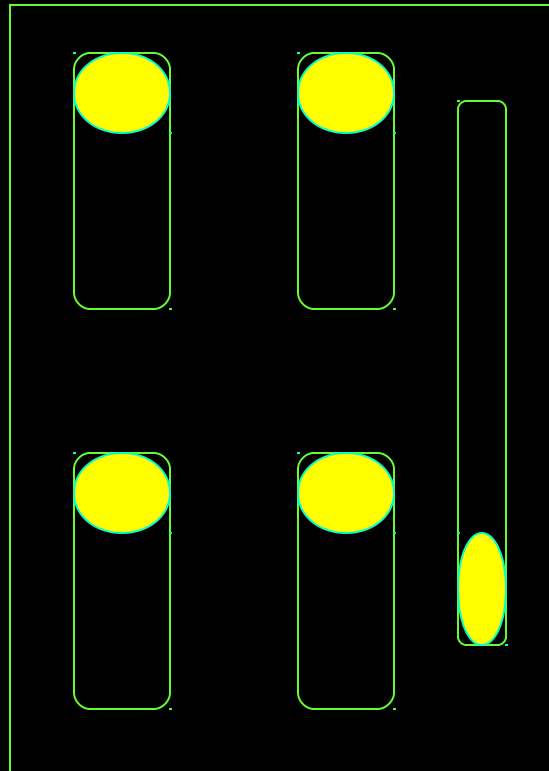
3RD

FORWARD

SPEED

REVERSE

RANGE



HI

N

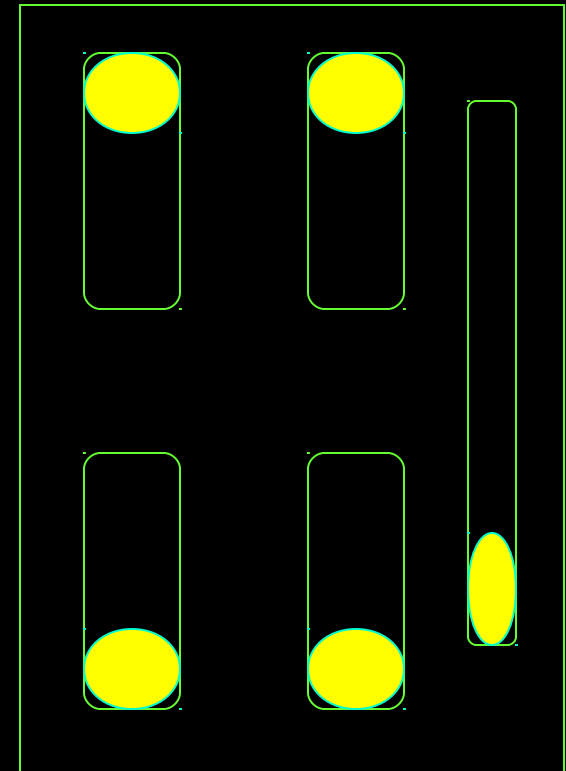
LO

DIRECTION

F

N

R

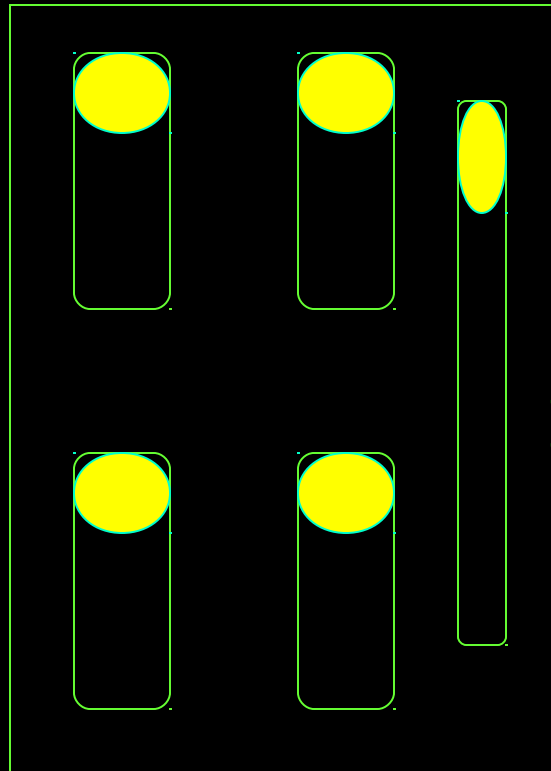


HI

LO

4TH

FORWARD



SPEED

HI

N

LO

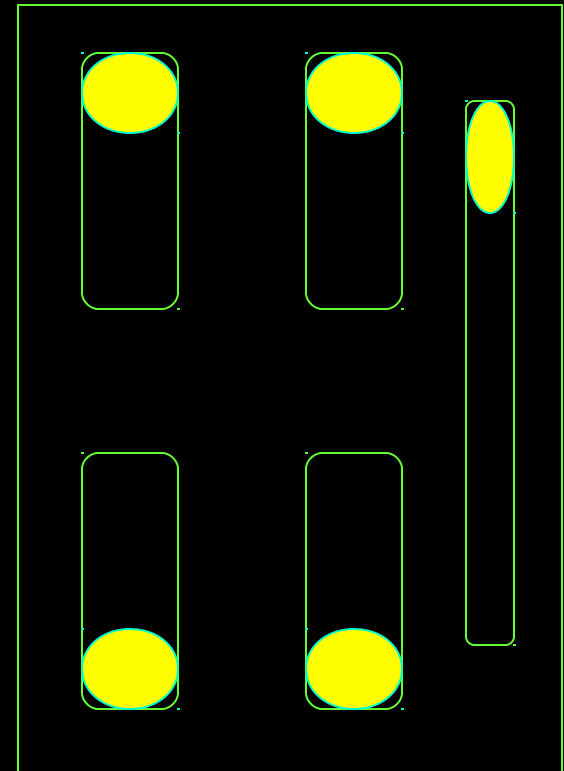
DIRECTION

F

N

R

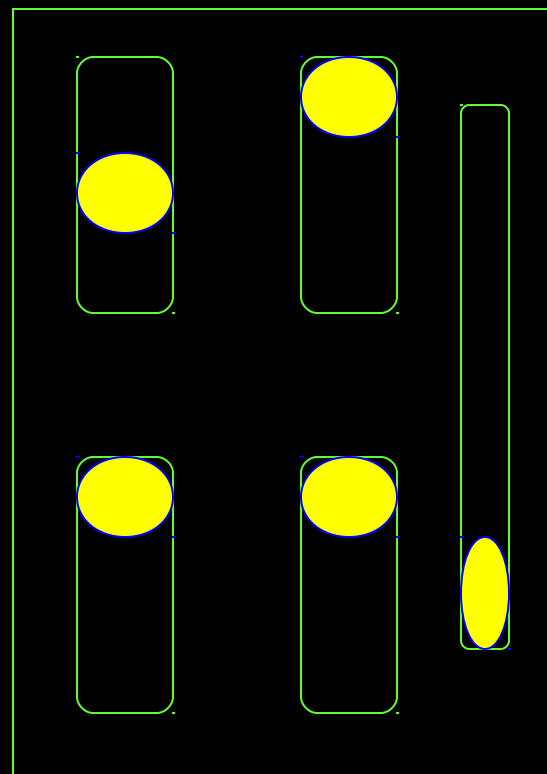
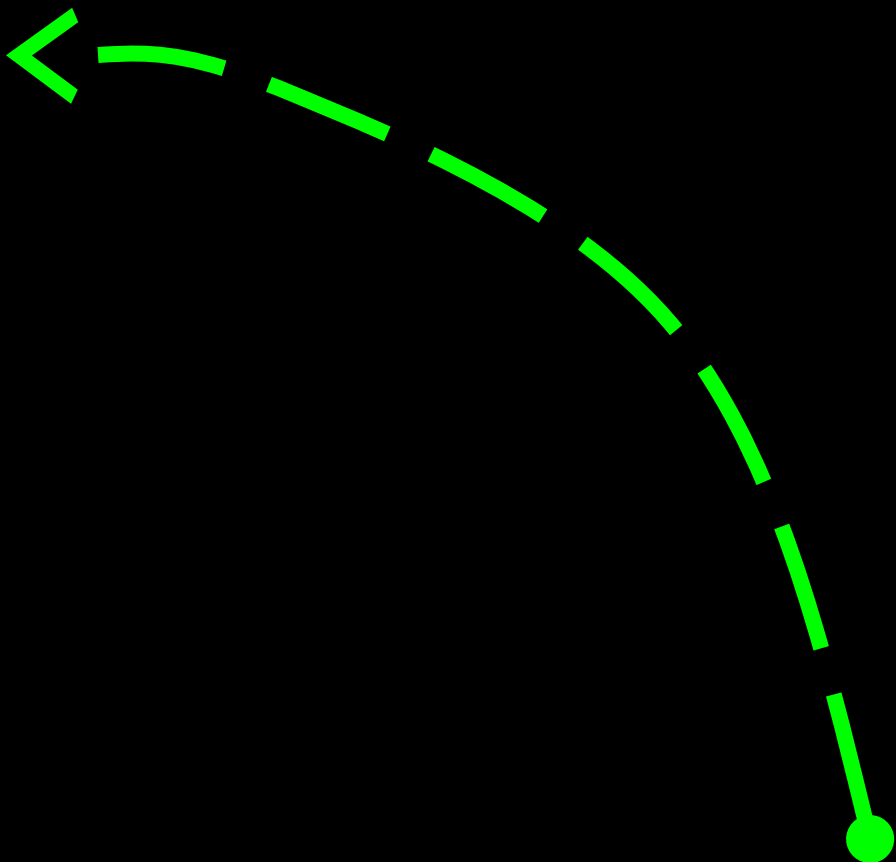
REVERSE RANGE



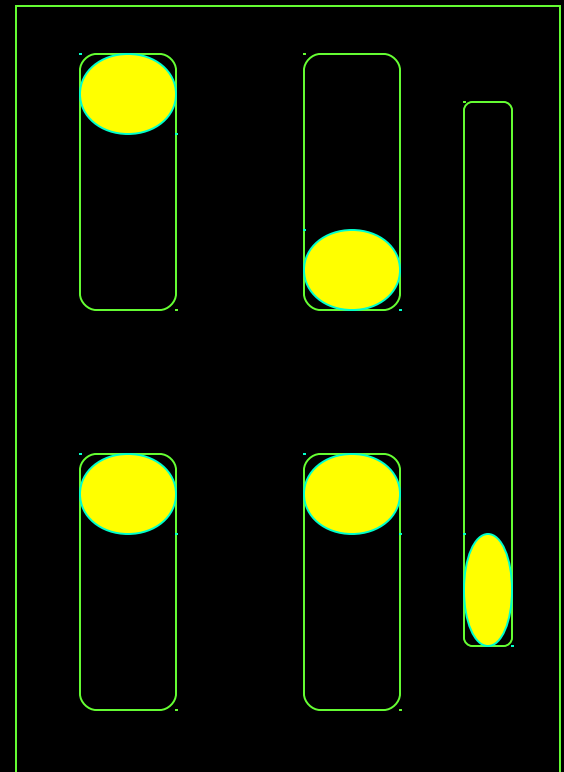
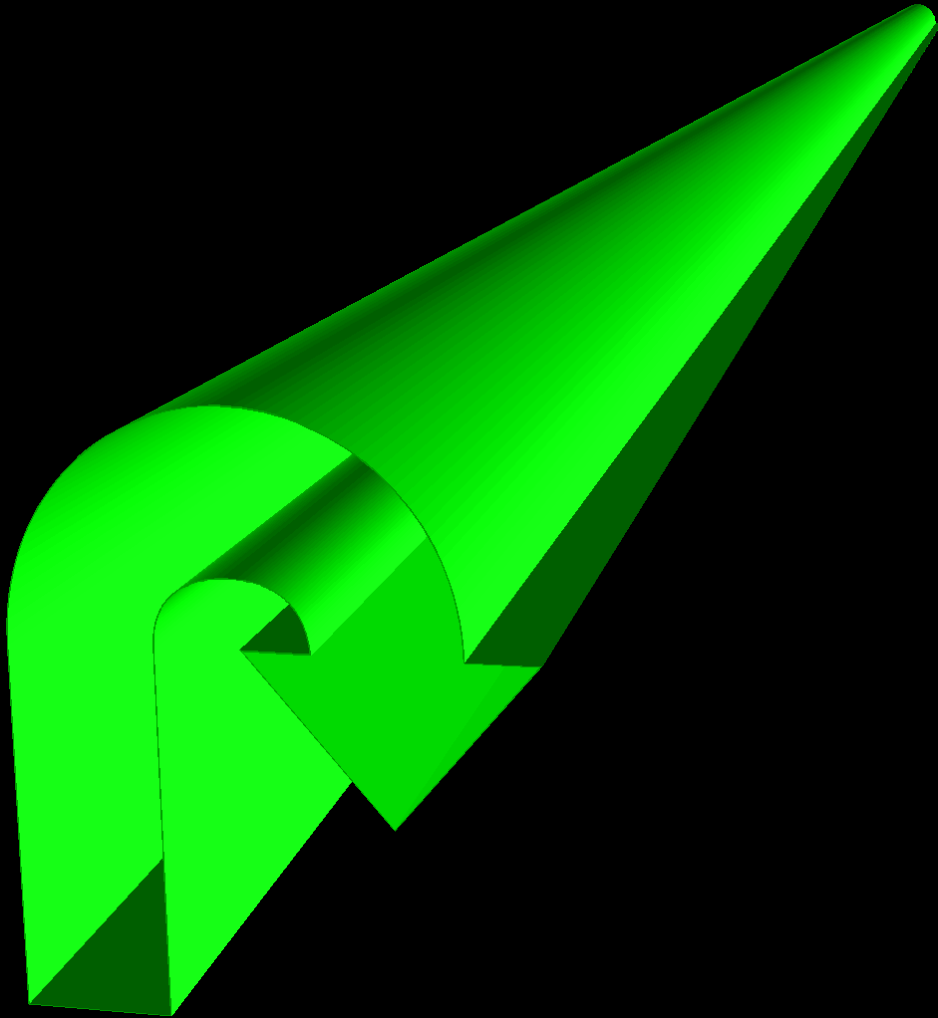
HI

LO

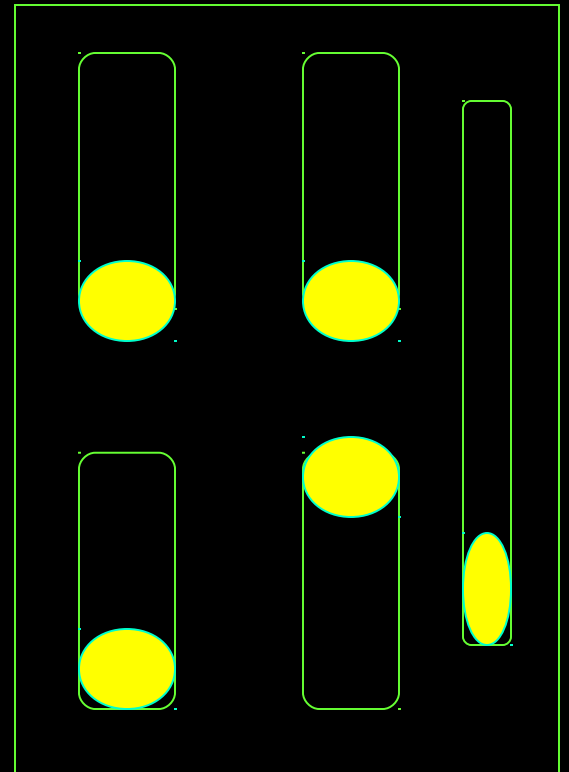
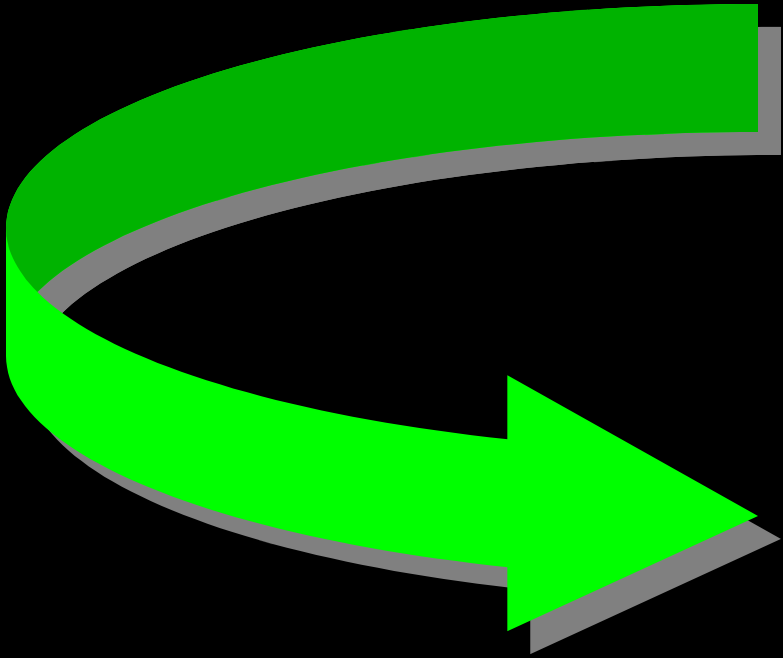
GRADUAL TURN



POWER TURN



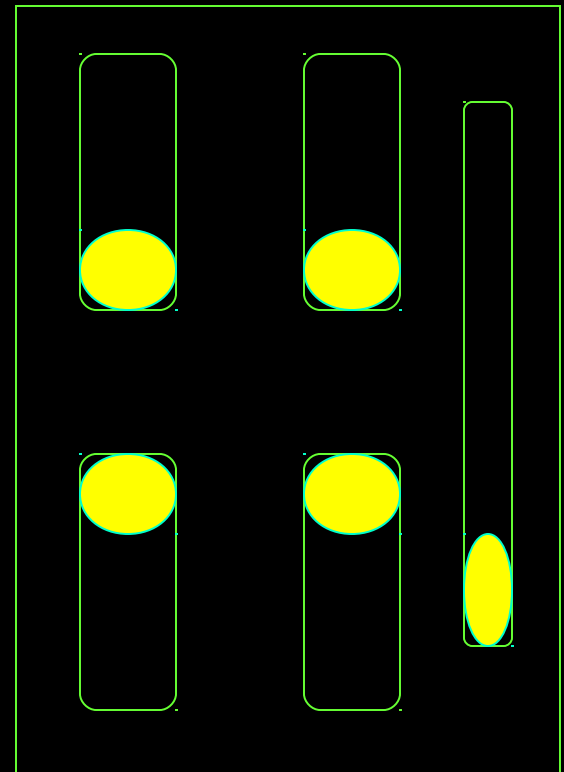
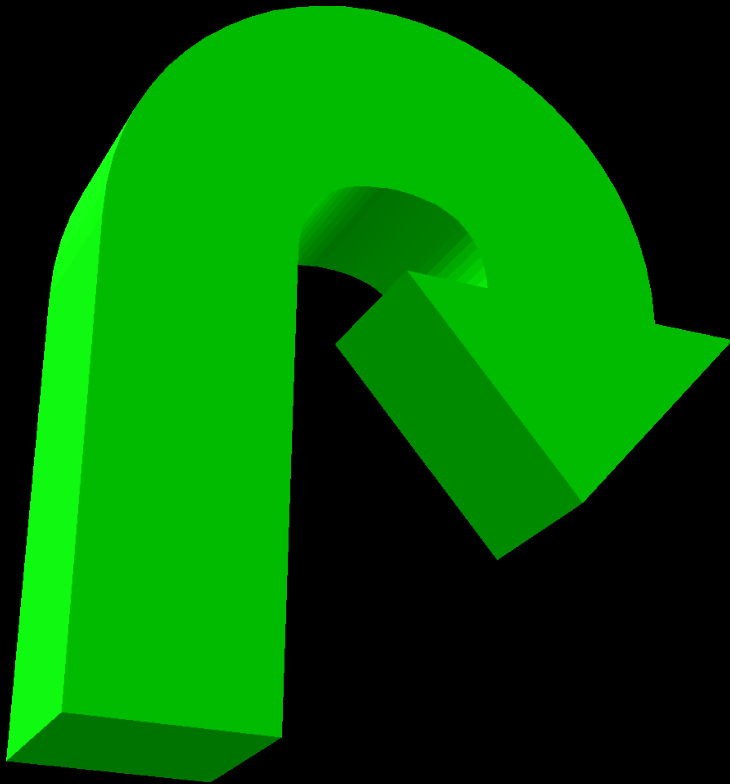
COUNTER ROTATION TURN



BRAKE TURN

USED FOR CLOSE QUARTER OPERATING

example: when near other equipment or buildings / structures



FORDING OPS

- THE MC1150E HAS THE CAPABILITY TO FORD UP TO 60 INCHES OF WATER/MUD.

FORDING OPS

- CHECK AREA
- DISCONNECT THE FAN
- ENSURE THE FAN HAS STOPPED
- PROCEED THROUGH THE WATER
- UPON EXIT, ENGAGE THE FAN

VEHICLE RECOVERY

- TWO TECHNIQUES

- WINCH

- BLADE TO BLADE

WINCH

- PLACE RECOVERY VEHICLE 25' TO 150' FEET FROM DISABLED TRACTOR
- ENSURE RECOVERY VEHICLE IS ON A STABLE FOUNDATION
- ENSURE WINCH CABLE IS SECURED TO CLEVIS HOOK OF DISABLED TRACTOR
- DISABLED TRACTOR PLACES TRANSMISSION IN REVERSE AND RAISES BLADE
- RECOVERY VEHICLE WILL ATTEMPT TO WINCH THE DISABLED TRACTOR

WINCHING OPERATIONS

- **CAUTION:** ALL UNNECESSARY PERSONNEL MUST STAND BACK A MINIMUM OF 2 X THE CABLE LENGTH
- THERE MUST BE ONLY 1 GROUND GUIDE

BLADE TO BLADE

- DISABLED TRACTOR
 - RAISE BLADE
 - PUT VEHICLE IN REVERSE
- RECOVERY VEHICLE SLOWLY APPROACHES AND MEETS DISABLED TRACTOR ENSURING MATERIAL IS BUILT UP BETWEEN THE TWO BLADES TO ACT AS A BUFFER
- PUSH
- WHEN DISABLED TRACTOR MOVES ON ITS OWN, SLOWLY BACK UP.
- BE SURE NOT TO DISABLE THE RECOVERY VEHICLE IN THE SAME CONDITIONS

DOZING TECHNIQUES

- SLOT
- BLADE TO BLADE
- DOWN HILL

SLOT

- INCREASES PRODUCTION UP TO 50%
- PREVENTS LOSS OF SPOILS
- 0- 300 FEET
- USED WHEN STOCKPILING AND HIGH PRODUCTION BULLDOZING.

BLADE TO BLADE

- INCREASES PRODUCTION BASED ON OPERATORS
- 50 -300 FEET.
- BEST IF USED BY EXPERIENCED OPERATORS.

DOWN HILL

- MOST PRODUCTIVE METHOD.
- USES GRAVITY TO INCREASE PRODUCTION
- USE WHENEVER JOBSITE PERMITS

DITCHING

- “V” DITCH
- FLAT BOTTOM

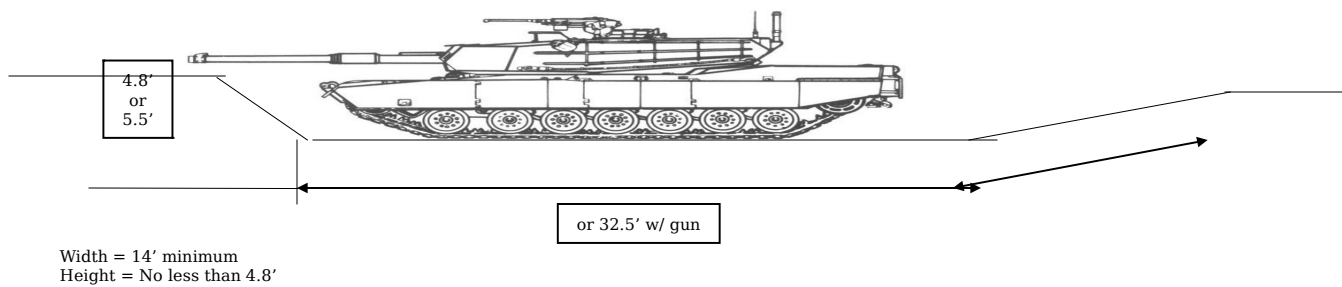
"V" DITCH

- ANGLE BLADE 10 -15 DEGREES
- FULLY TILT BLADE
- MAKE SUCCESSIVE CUTS TO DESIRED DEPTH

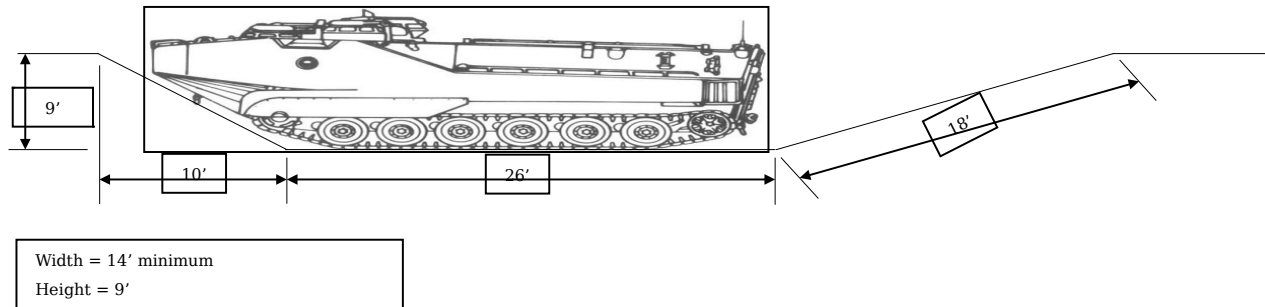
FLAT BOTTOM DITCH

- ENSURE BLADE IS LEVEL PRIOR TO CONSTRUCTION
- SUCCESSIVE CUTS TO DESIRED DEPTH
- NOTE: EVEN ANGLE IN & OUT WITH THE LONGEST PORTION OF THE DITCH BEING THE FLAT BOTTOM

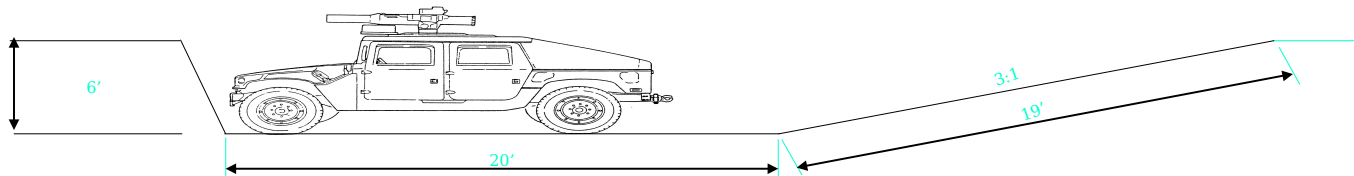
Tank Hull Defilade Position



AAV in Hull Defilade Position



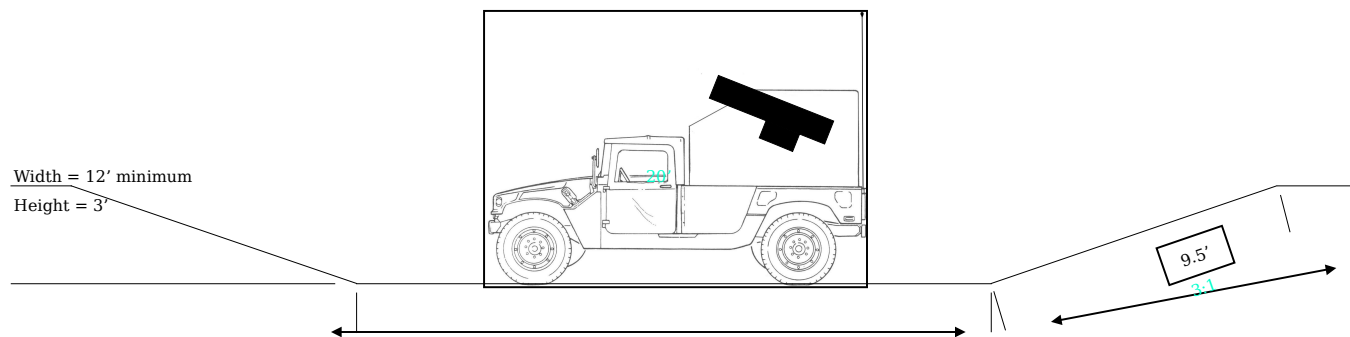
TOW Position



Width = 12' minimum

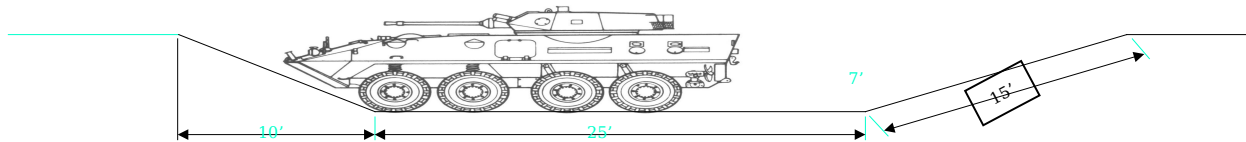
Height = No more than 6' or gun will be unable to fire.

Avenger Position



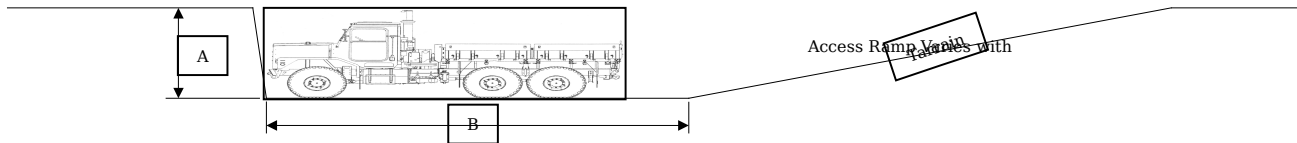
Survivability	Time Required to Construct		
	W/ D7F Dozer	W/ ACE	W/ SEE
M1 Hull-defilade position	1 BTH	1.5 BTH	
M1 Turret-defilade position	2.5 BTH	3.5 BTH	
HMMWV TOW position	0.75 BTH	1.5 BTH	
Vehicle-protective position	0.75 BTH	1 BTH	
AAV Hull-defilade position	2.75 BTH	3.75 BTH	
LAV Hull-defilade position	1.5 BTH	2.5 BTH	
Antitank Ditch	1 BTH for 70 m	1 BTH for 50 m	
Dismount-crew position			0.5 SEEH
Individual-fighting position			0.25 SEEH
Add 15% time for rocky/hard soil, night time, buttoned up, or inexperienced operator. Out of 24 hrs, 4 hours will be used for equipment maintenance.			

LAV Hull Defilade Position



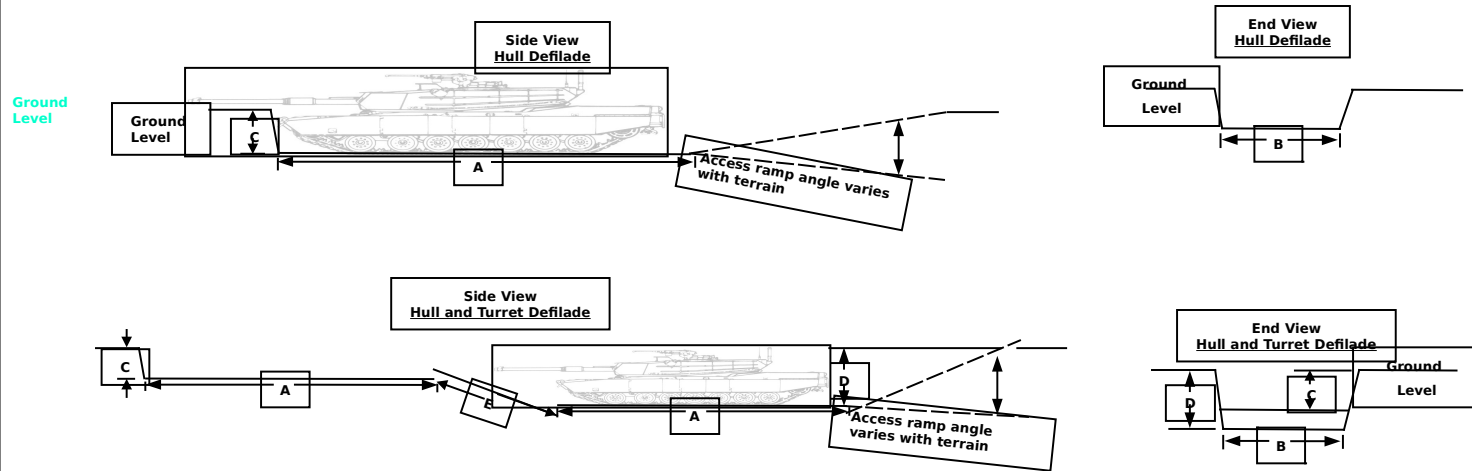
Width = 12' minimum

Deep-cut 5 and 7 Ton Position



Vehicle	DEPTH (A)	LENGTH (B)	WIDTH	Approximate Dig Time	
				D7 (BTH)	ACE (BTH)
7 ton	12' - 10"	32' - 3"	12'	2.0	3.0
5 ton 900 Series	11' - 5"	32' - 2"	12'	2.0	3.0
5 ton 800 Series	10' - 10"	32' - 11"	12'	1.5	2.5

Vehicle Fighting Positions (Deliberate)



Notes:

1. Tank is shown for better understanding of graphic.
2. A = Vehicle Length
3. B = Vehicle Width + 3'
4. C = Distance from the bottom of Weapon System to the ground.
5. D = Height of the vehicle + 1'
6. E = Approx. $\frac{1}{2}$ (A).

STOPPING PROCEDURES

- Bring the tractor to a Complete Stop in a designated area.
- Shift all control levers to the Neutral position.
- Raise/Apply the Neutral Lock into position.
- Apply the Manual Brake and pull up on the Parking Brake.
- Slowly lower the Blade to the ground, and place the blade in Float.
- Allow the engine to Cool-Down for 3-5 minutes.
- Turn the Engine Run switch to the OFF position
- Turn the Master Disconnect switch to the OFF position.
- Dismount the tractor from the Left Side using Handrails and Foot Pegs.
- Perform After Operation Checks.

NAVMC 10523

- CHANGE THE BACKOF THE NAVMC 10523
 - BLOCK 9
 - NO CLUTCH
 - BLOCK 14
 - CHANGE AIR TANKS TO AIR COMPRESSOR
 - BLOCK 22
 - LINE OUT TIRES
 - BLOCK 23
 - WRITE “BLADE”
 - BLOCK 24
 - WRITE “WINCH”

AIR COMPRESSOR

- Located on the left side of the tractor, inside the engine compartment.
- Must be drained daily during *after operation checks*.



SUMMARY

